What is claimed is:

1. A dispersion compensation device, comprising:

a segment of dispersion compensating fiber; and

a thermal regulator coupled to said dispersion compensating fiber, said thermal regulator being configured to adjust a temperature of said segment of dispersion compensating fiber to thereby change a dispersion coefficient function associated with said segment of dispersion compensating fiber.

2. A dispersion compensating device in accordance with claim 1, wherein said segment of dispersion compensating fiber is configured to receive a plurality of optical signals, each at a respective wavelength, said thermal regulator compensating said temperature of said segment of dispersion compensating fiber such that each of said plurality of optical signals has substantially the same dispersion.

3. A dispersion compensating device in accordance with claim 2, wherein said dispersion of each of said plurality of optical signals is substantially equal to zero.

4. A dispersion compensating device in accordance with claim 1, wherein said dispersion coefficient function has a non-zero slope.

5. A dispersion compensating device in accordance with claim 1, further comprising a thermally conductive medium encasing at least a portion of said dispersion compensating fiber and said thermal regulator.

6. A dispersion compensating device in accordance with claim 1 further comprising a controller coupled to and supplying a control signal to said thermal regulator.

7. A dispersion compensating module in accordance with claim 6, wherein said thermal regulator maintains said dispersion compensating fiber within a predetermined temperature range in response to said control signal output from said controller.

8. A dispersion compensating module in accordance with claim 6 wherein said thermal regulator maintains said dispersion compensating fiber at a predetermined temperature in response to said control signal output from said controller.

9. A dispersion compensating module in accordance with claim 7, further comprising a temperature sensor coupled to said dispersion compensating fiber, said temperature sensor providing a temperature signal to said controller, said controller generating said control signal in response to said temperature signal.

10. A dispersion compensating module in accordance with claim 1, wherein said segment of dispersion compensating fiber is a first segment of dispersion compensating fiber and said temperature regulator is a second temperature regulator, said dispersion compensating device further comprising:

a second segment of dispersion compensating fiber; and

a second thermal regulator coupled to said second dispersion compensating fiber, said thermal regulator being configured to adjust a temperature of said second segment of dispersion compensating fiber to thereby change a dispersion coefficient function associated with said second segment of dispersion compensating fiber.

11. A dispersion compensating device in accordance with claim 10, further comprising a thermally conductive medium encasing at least a portion of said second segment of dispersion compensating fiber and said second thermal regulator.

12. A dispersion compensating device in accordance with claim 10, further comprising a controller coupled to and supplying a control signal to said second thermal regulator.

13. A dispersion compensating device in accordance with claim 12, wherein said second thermal regulator maintains said dispersion compensating fiber within a predetermined temperature range in response to said control signal output from said controller.

14. A dispersion compensating module in accordance with claim 12 wherein said thermal regulator maintains said dispersion compensating fiber at a predetermined temperature in response to said control signal output from said controller.

15. A dispersion compensating module in accordance with claim 10, further comprising a temperature sensor coupled to said dispersion compensating fiber, said temperature sensor providing a temperature signal to said controller, said controller generating said control signal in response to said temperature signal.

16. A communications network comprising:

an optical transmitter emitting an optical signal at a first wavelength;

an optical communication path coupled to said optical transmitter, said optical communication path being configured to carry said optical signal;

a service channel emitter coupled to one of said optical communication path and an alternate optical communication path, said service channel emitter supplying a service channel optical signal to said one of said optical communication path and said alternate optical communication path, said service channel optical signal being at a second wavelength different than said first wavelength;

a dispersion compensating fiber having an associated dispersion characteristic; and

a control circuit coupled to said dispersion compensation module, said control circuit being configured to adjust a dispersion characteristic associated with said dispersion compensating fiber in response to data carried by said service channel.

17. A communications network in accordance with claim 16, wherein said data carried by said service channel include signal quality information associated with said optical signal.

18. A communications network in accordance with claim 16, further comprising:

a plurality of additional transmitters coupled to said optical communication path, each of said additional optical transmitters emitting a respective one of a plurality of additional optical

signals, each of said plurality of additional optical signals being at a respective one of a plurality of wavelengths, each of said plurality of wavelengths being different than said first and said second wavelengths, said dispersion characteristic being adjusted such that said optical signal and each of said plurality of optical signals has substantially the same dispersion.

19. A communication network in accordance with claim 18, wherein said dispersion is substantially equal to zero.

20. A communication network in accordance with claim 16, wherein said control circuit includes a thermal regulator coupled to said dispersion compensating fiber, said thermal regulator being configured to adjust a temperature of said dispersion compensating fiber.

21. A communication network in accordance with claim 16, wherein said control circuit further comprises:

first circuitry configured to sense said service channel optical signal and generate a sense signal in response thereto, said sense signal carrying said data;

second circuitry coupled to said first circuitry and being configured to output a temperature signal in response to said sense signal; and

a thermal regulator coupled to said second circuitry, said thermal regulator compensating a temperature of said dispersion compensating fiber in response to said temperature signal to thereby adjust said dispersion characteristic.

22. A communication network in accordance with claim 20, wherein said dispersion

compensating fiber is substantially encased in a thermally conductive medium.

23. A communication network in accordance with claim 16, wherein said dispersion compensating fiber is a first dispersion compensating fiber, said communication network further comprising:

a second dispersion compensating fiber coupled to said optical communication path, said control circuit being configured to adjust a dispersion characteristic associated with said second dispersion compensating fiber in accordance with additional data carried by said service channel optical signal.

24. A communication method comprising the steps of:

supplying an optical signal to a segment of dispersion compensating fiber;

compensating a temperature of said dispersion compensating fiber to thereby adjust a dispersion characteristic of said dispersion compensating fiber; and

altering a dispersion of said optical signal in accordance with said adjusted dispersion characteristic.